

---

# *Carica palandensis* (Caricaceae), a New Species from Ecuador

Victor M. Badillo

Herbario Maracay, Universidad Central de Venezuela, Facultad de Agronomía,  
Instituto de Botánica Agrícola, Apartado 4579, Maracay 2101, Venezuela

Veerle Van den Eynden and Patrick Van Damme

Department of Tropical and Subtropical Agriculture and Ethnobotany, University of Gent,  
Coupure Links 653, 9000 Gent, Belgium

---

**ABSTRACT.** A new species of the genus *Carica*, found in forests in southeast Ecuador, is described. *Carica palandensis* Badillo, Van den Eynden & Van Damme is clearly distinguished from all other *Carica* species by its always compound leaves with 5- to 9-petiolate leaflets.

**RESUMEN.** Se describe una nueva especie del género *Carica* encontrada en los bosques del sureste del Ecuador. *Carica palandensis* Badillo, Van den Eynden & Van Damme se distingue claramente de las demás especies de *Carica* por sus hojas siempre compuestas con 5 a 9 folíolos petiolulados.

In the course of an ethnobotanical inventory of wild edible plants in southern Ecuador, a new species of *Carica* was collected in Palanda in the Amazonian province of Zamora-Chinchipec. After the initial collection of a female plant in December 1995, a second visit was paid to the same area in June 1997, and as a result more material was collected of both male and female plants. The area where this species was discovered is under great pressure from land clearance for timber production, to the extent that the site of the December 1995 collection was completely cleared by June 1997 and the species no longer existed at this site.

***Carica palandensis*** Badillo, Van den Eynden & Van Damme, sp. nov. TYPE: Ecuador. Prov. Zamora-Chinchipec: Palanda, barrio Agua Dulce, sector Los Cedros, 1850 m, 4°41'03"S, 79°10'16"W, 8 June 1997, V. Van den Eynden, E. Cueva & O. Cabrera 998 (holotype, QCA; isotypes, LOJA, MY, QCNE). Figure 1.

Arbor truncus recto simplici usque ad 10 cm diametro et 6 m alto. Folia digitata 5 ad 9-foliolata; foliolis acuminatis petiolulatis, supra glabris, infra secus nervos puberulis, lateralibus 8–42.5 cm longis et 3.5–13.5 cm latis, integris, centrali conspicue trilobato, lobis lateralibus 14–29 cm longis, 4.5–8 cm latis, centrali pseudopetiolo, 20–36 cm longo, 7.5–12 cm lato. Inflorescentia staminata

axillaris, anguste paniculata multiflora, puberula, usque ad 16 cm longa, floribus breviter pedicellatis. Flos staminatus sepalis triangulis 1–2 mm longis, 0.5–1 mm latis; corolla flava, tubo 15–22 mm longo, 1.5–4 mm lato, lobulis oblongo-lanceolatis 15–21 mm longis, 2–4 mm latis; staminibus 10 biserialibus, 5 superiorum antheris glabris, 2–2.5 mm longis, filamentis 2–2.5 mm longis, breviter et laxe pilosis, 5 inferiorum antheris glabris, 2–2.5 mm longis, connectivo 1 mm, filamentis 1 mm longis. Inflorescentia pistillata axillaris, pauciflora, flores terminalem unicum et laterales nonnullos pedicellatos gerente, usque ad 9 cm longa, leviter pubescens. Flos pistillatus sepalis triangulis, 2–3 mm longis, 1.5–2 mm latis; petalis flavis puberulis, oblonge triangulis, 45–60 mm longis, 9–12 mm latis; ovario supero, 5-loculari, 5-angulari, 11–19 mm longo, 7–13 mm lato, apicem versus attenuato; ovulis numerosis placentatione parietali; stylo 3–4.5 mm longo; stigmatibus 5, 7–10 mm longis, puberulis, apicem versus bifidis, ramulis 2–3 mm longis. Fructus baccatus luteus subglobosus, 7–8.5 cm longus et 6.4–8 cm latus, pedicello 9.5–11 cm longo insidens; seminibus ellipsoideis 7–8 mm longis et 4–5 mm latis, in greges quinque pulpa aurantiaca circumcinctas aggregatis, unoquoque semine sclerotesta tuberculis conicis ornata praedito et sarcotesta gelatinosa circumcincta.

Dioecious tree to 6 m tall; DBH 5–10 cm; bark light brown, covered with leaf scars; stipules absent. Latex opaque milky. Leaves membranaceous, alternate, crowded at top of tree, palmately compound; petiole to 64 cm long; petiolules 6–25 mm long; leaflets 5 to 9 (5 to 7 on male plants, 5 to 9 on female plants), glabrous and bright green above, lighter green below with short slight pubescence on veins; 4 to 8 basal leaflets entire, 8–42.5 × 3.5–13.5 cm, narrowly elliptic to narrowly ovate, base acute, apex acuminate; central leaflet trilobed, 2 lateral lobes 14–29 × 4.5–8 cm, elliptic, apex acuminate, central lobe appearing to be a petiolulate leaflet but actually subtended by an extension of the main vein, 20–36 × 7.5–12 cm, elliptic to ovate, base acute, apex acuminate; veins raised beneath, primary vein often reddish. Male inflorescences axillary, many-flowered panicles, to 16 cm long, pubescent; peduncle 3–9 cm long, to 2 mm diam.; lateral branches 1–5 cm long; pedicels 2–6



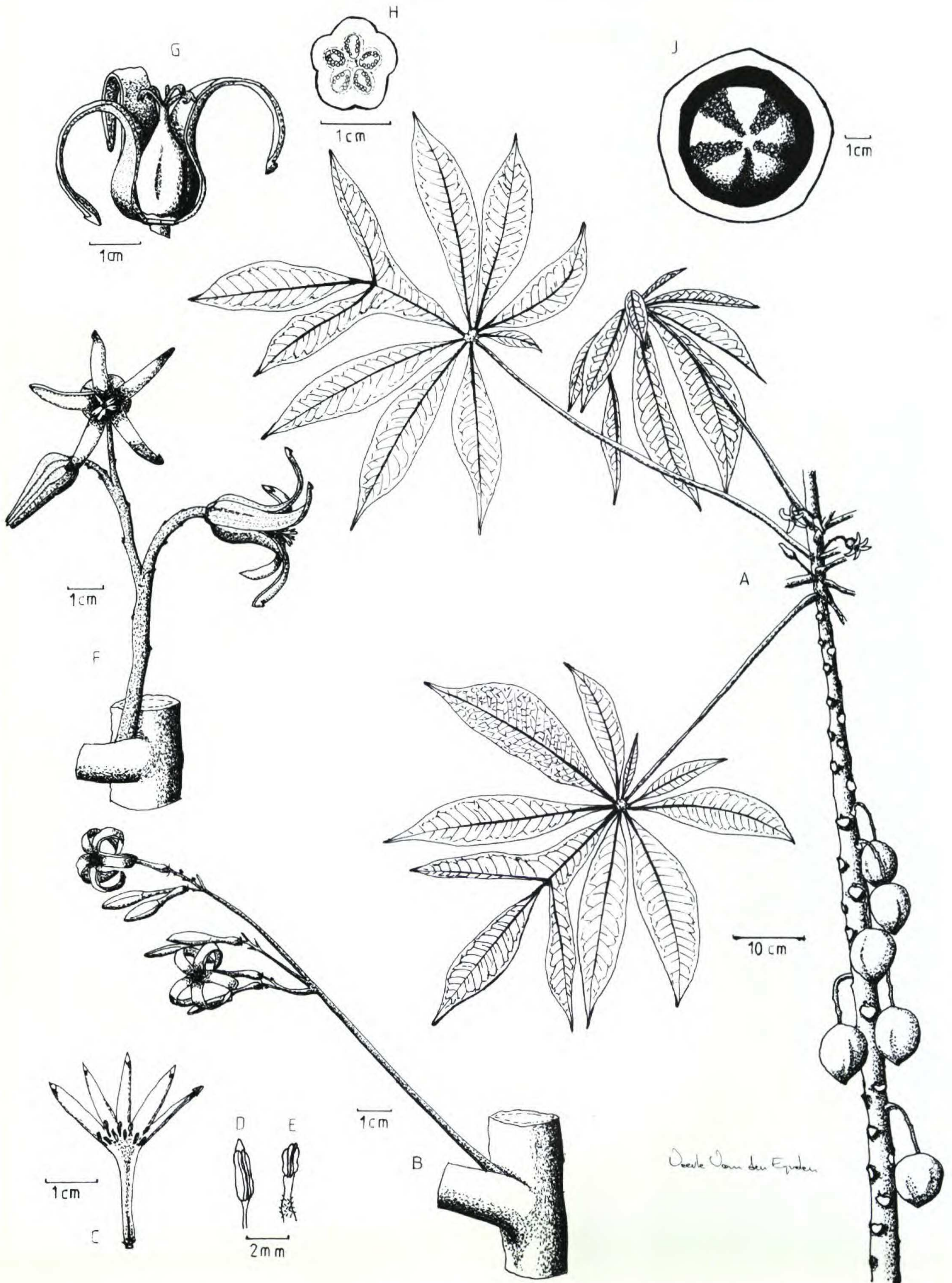


Figure 1. A–J. *Carica palandensis* Badillo, Van den Eynden & Van Damme. —A. Tree. —B. Male inflorescence. —C. Male flower, longitudinal view with perianth removed. —D. Lower stamen. —E. Upper stamen. —F. Female inflorescence. —G. Female flower, longitudinal view with perianth removed. —H. Ovary in cross section. —J. Fruit in cross section. Drawn from photographs, pickled material, and specimens: *Van den Eynden et al.* 998 (female plant), *Van den Eynden et al.* 999 (male plant), *Van den Eynden et al.* 1000 (female plant), and *Van den Eynden et al.* 1001 (female plant).



mm long, with a few small bracts to 1 mm long. Male flowers 5-merous. Sepals green, triangular, 1–2 × 0.5–1 mm. Corolla green-yellow (color 144 B of the RHS Color Chart); tube 15–22 mm long, 2–4 mm wide at base, 1.5–2 mm wide in the middle, 2–3 mm wide at apex; lobes oblong-lanceolate, 15–21 × 2–4 mm, apex acute. Sepals and petals alternate. Stamens 10, in 2 series, attached at apex of corolla tube, versatile, 2 thecae each, opening with longitudinal slits, introrse; upper stamens with loosely pilose filaments 2–2.5 mm long, anther glabrous, 2–2.5 mm long, anther connective not prolonged above anther; lower stamens with filament 1 mm long, anther glabrous, 2–2.5 mm long, anther connective prolonged for 1 mm above anther. Rudimentary gynoecium 6–7 mm long. Female inflorescences axillary, cymose, few-flowered, to 9 cm long, slightly pubescent; peduncle 3–4.5 cm long, 3 mm diam.; pedicels 5–15 mm long, with a few small bracts 1 mm long. Female flowers 5-merous. Sepals green-reddish, triangular, 2–3 × 1.5–2 mm. Petals green-yellow (color 145 B-C of the RHS Color Chart) to reddish outside, green inside, pubescent, free, oblong-triangular, 45–60 × 9–12 mm, apex obtuse. Sepals and petals alternate. Ovary superior, 5-locular, 5-angular, 11–19 × 7–13 mm, attenuate toward apex; numerous anatropous ovules on parietal placentas; style 3–4.5 mm long; stigmas 5, 7–10 mm long, shortly pubescent, apically often split in 2 ends of 2–3 mm each. Fruit a subglobose berry, yellow-orange (color 22 A of the RHS Color Chart), base rounded to emarginate, apex acuminate, 72–85 × 64–82 mm; pericarp 7–9 mm thick; pedicel of fruit 9.5–11 × 6–7 mm. Seeds dark brown, 7–8 × 4–5 mm, ellipsoidal, sclerotesta with numerous conical protuberances, each seed surrounded by a gelatinous sarcotesta, seeds arranged in 5 groups surrounded by orange pulp.

**Ecology and distribution.** The species is known only from the area around Palanda, after which it is named. Palanda is situated at 4°41'S, 79°10'W in the province of Zamora-Chinchipe, Ecuador. It is found in the wild in humid premontane forest at 1790–1850 m elevation. Plants are not cultivated.

**Phenology.** Plants have been collected in flower (and in bud) and fruit in June and in fruit and with fertilized flowers in December.

*Carica palandensis* is readily distinguished by its always compound leaves with 5- to 9-petiolate leaflets. The only other *Carica* species to have (sometimes) palmately compound leaves are *Carica goudotiana* (Triana & Planchon) Solms-Laubach and in a few cases *Carica microcarpa* Jacquin, but never are there 7 or 9 leaflets nor are they all petiolulate (Badillo, 1993). Furthermore this species is characterized by its seeds being arranged in 5 groups, each surrounded by pulp. When opening the fruit, the seeds fall apart in these 5 groups (cf. an orange).

**Uses.** The sweet pulp surrounding the seeds can be eaten by putting the whole mass of seeds and pulp in the mouth, sucking, and subsequently spitting the seeds out. The seeds and pulp can also be mixed with water and sugar. After stirring and straining off the seeds, a fruity drink results.

**Local name.** Papaillo.

**Paratypes.** ECUADOR. **Zamora-Chinchipe:** Palanda, barrio Agua Dulce, camino a las fincas, bosque húmedo premontano, remanente de bosque poco intervenido, 4°41'S, 79°10'W, 1790 m, 21 Dec. 1995, V. Van den Eynden, E. Cueva & O. Cabrera 549 (LOJA, QCA, QCNE) (female plant); Palanda, barrio Agua Dulce, sector Los Cedros, remanente de bosque, bosque húmedo premontano, 4°41'03"S, 79°10'16"W, 1850 m, 8 June 1997, V. Van den Eynden, E. Cueva & O. Cabrera 999 (LOJA, QCA, QCNE) (male plant); Palanda, barrio Agua Dulce, sector Los Cedros, remanente de bosque, bosque húmedo premontano, 4°41'03"S, 79°10'16"W, 1850 m, 8 June 1997, V. Van den Eynden, E. Cueva & O. Cabrera 1000 (LOJA, QCA) (female plant); Palanda, barrio Agua Dulce, sector Los Cedros, remanente de bosque, bosque húmedo premontano, 4°41'03"S, 79°10'16"W, 1850 m, 8 June 1997, V. Van den Eynden, E. Cueva & O. Cabrera 1001 (LOJA) (female plant).

**Acknowledgments.** This work was supported by VLIR (Vlaamse Interuniversitaire Raad) and VVOB (Vlaamse Vereniging voor Onderwijs en technische Bijstand) grants to Veerle Van den Eynden. We thank Paul Goetghebeur for help with the Latin description and for useful comments on the manuscript, Gwylim Lewis for help with the correct terminology, and Patricio Mena for checking the Spanish summary.

#### Literature Cited

- Badillo, V. M. 1993. Caricaceae. Segundo Esquema. Revista Fac. Agron. Univ. Centr. Venezuela, Alcance N° 43.